SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-48

Name: Richland Dam **County(ies):** Jones
Legal Description: T02N-R31E-Sec. 8 **GPS:** 44°08'51.085"N 100°24'31.647"W
Location from nearest town: 18 miles S, 3.5 miles W of Ft. Pierre

Date of present survey: June 8-10, 2015 (netting), September 29, 2015 (electrofishing)
Date of last survey: June 5-6, 2012 (netting), October 16, 2012 (electrofishing)
Most recent lake management plan: None done
Management classification: Unknown

Primary Game Species	Secondary and Other Species
Bluegill	Yellow Perch
Black Crappie	Black Bullhead
Largemouth Bass	

PHYSICAL DATA

Richland Dam is located in Jones County. The entire lake is located on property owned by the United States Department of Agriculture, Forest Service and is part of the Fort Pierre National Grasslands. The dam and spillway are in good shape. A new concrete boat ramp was just built along with a couple earthen fishing piers.

Richland Dam is a 16 surface acre lake that had a maximum depth at the time of the survey of 18 feet. Richland is entirely surrounded by cattails and many other types of emergent aquatic vegetation. Submergent vegetation also surrounds most of the shoreline to depths of about 6 feet and consists mainly of sago pondweed with a few others mixed in. The combination of submergent and emergent vegetation around the lake limits the amount of shore fishing opportunities. There is good boat access via a new concrete boat ramp. There is also good ice fishing opportunities. No depth contour map has ever been done on Richland Dam.

CHEMICAL DATA

No pollution problems were evident at the time of the survey. Water clarity is excellent with a secchi disc reading of 5.0 feet. Other water quality characteristics were measured in the field on June 8, 2015, using a HACH water quality kit and a Hanna multiparameter meter. Results are found in Table 1.

Table 1. Water chemistry results from Richland Dam, Jones County, June 8, 2015.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/L)	HRD (mg/L)	pH	Cond. (µS/cm)	TDS (ppm)	Sal.	ORP	Secchi (ft)
A	Surface	71.7	5.23	32.6	205	405	8.59	1104	537	0.53	-233.8	5.0
A		67.7	1.78	61.0	221	424	8.07	1103	554	0.55	-234.0	

BIOLOGICAL DATA

Methods:

Richland Dam was sampled on June 8-10, 2015, with eight overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and ¾ inch knotted mesh. No experimental gill nets were set during this survey. On the evening of September 29, 2015, Richland Dam was electrofished for 20 minutes (2-ten minute transects) to sample the largemouth bass population. The boat was set up with 120 pulses per second of DC current at 340 volts with around 16 amps to electrofish the lake that had a conductivity of 1134 µS/cm with a water temperature of 65.3°F. Fish indices and statistics were completed using Winfin.

Results and Discussion:

Trap Net Catch

Table 2. Total catch of eight, overnight ¾-inch frame nets at Richland Dam, Jones County, June 8-10, 2015.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Bluegill	155	79.5	19.4	± 8.8	32.9	52	26	102
Black Crappie	25	12.8	3.1	± 1.5	7.3	83	21	88
Black Bullhead	12	6.2	1.5	± 0.8	0.3	92	92	100
Largemouth Bass	3	1.5	0.4	± 0.4	0.1	--	--	103

* Four year mean (1993, 2006, 2009, 2012)

Electrofishing Catch

Table 3. Total catch from two, ten-minute runs of fall nighttime electrofishing on Richland Dam, Jones County, September 29, 2015.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Largemouth Bass	81	100	243.0	± 9.2	202.5	32	25	98

* One year mean (2012)

Largemouth Bass

Richland Dam contains a quality largemouth bass population. The second electrofishing sample yielded very similar results to the first sample. The CPUE of 243.0 is above the 202.5 from the 2012 survey (Table 3). Size structure is also similar with a PSD of 32 with an RSD-P of 25 compared to the 64 and 35 respectively from the 2012 survey. Figures 1 and 2 illustrate the length frequency histograms for the fish sampled the past two surveys and they look similar. Condition is good with a mean Wr of 98. Growth is good with means right on with statewide, regional and SLI means (Table 4).

Table 4. Average back-calculated lengths (mm) for each age class of largemouth bass sampled from Richland Dam, Jones County, 2015.

			Back-calculated Age							
Year Class	Age	N	1	2	3	4	5	6	7	8
2014	1	9	98							
2013	2	44	109	199						
2012	3	7	83	157	247					
2011	4	1	78	146	230	327				
2010	5	7	93	173	259	321	358			
2009	6	6	93	157	229	303	340	372		
2008	7	2	126	218	297	321	357	388	415	
2007	8	4	98	200	285	365	407	431	451	461
All Classes		**80**	**97**	**178**	**258**	**327**	**365**	**397**	**433**	**461**
Statewide Mean			96	182	250	305	342			
Region II Mean			105	183	246	296	328			
SLI* Mean			99	183	246	299	332			

* Small Lakes and Impoundments

Figure 1. Length frequency histogram for largemouth bass sampled from Richland Dam, Jones County, 2015.

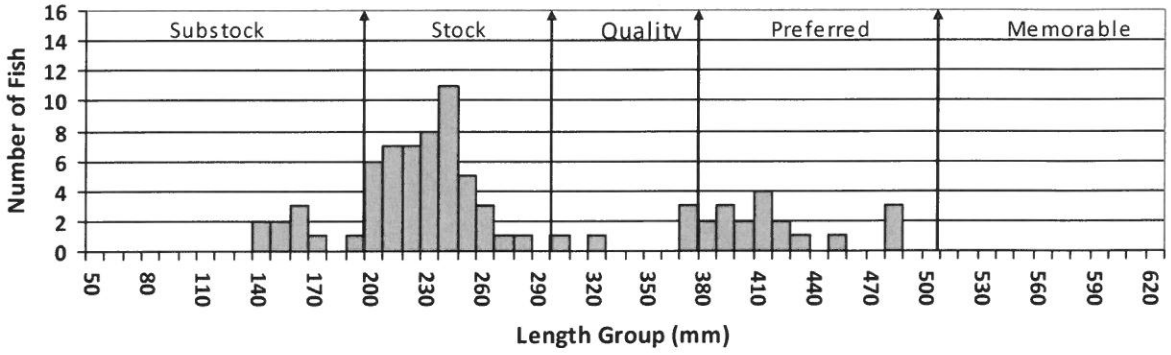
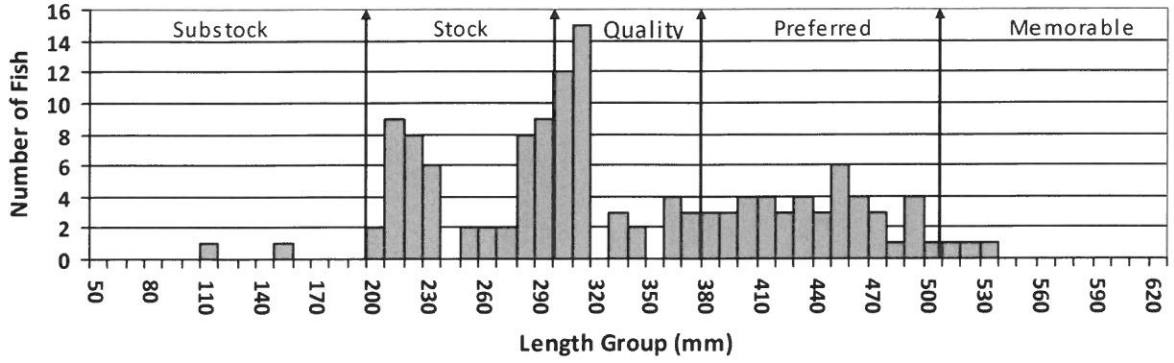


Figure 2. Length frequency histogram for largemouth bass sampled from Richland Dam, Jones County, 2012.



Bluegill

Bluegills continue to remain the dominant panfish species present in Richland Dam. The CPUE of 19.4 is below the 38.0 from the 2012 survey as well as the four year mean of 32.9 (Table 2). Figures 3-7 illustrate the length frequency histograms for the fish sampled over the last five surveys. The population appears to be on the rebuild by the looks of the larger number of small fish in the population, age data also illustrates this with most fish aged at 2 year old. Condition is good with a mean Wr of 102. Growth is fine with means just slightly below statewide, regional and SLI means (Table 5).

Table 5. Average back-calculated lengths (mm) for each age class of bluegill sampled from Richland Dam, Jones County, 2015.

			Back-calculated Age							
Year Class	Age	N	1	2	3	4	5	6	7	8
2013	2	50	41	85						
2012	3	8	41	96	158					
2011	4	7	37	78	132	178				
2009	6	9	44	70	108	148	174	192		
2008	7	27	43	70	102	142	164	186	201	
2007	8	1	42	71	117	139	165	184	196	213
All Classes		**102**	**41**	**78**	**123**	**151**	**168**	**188**	**198**	**213**
Statewide Mean			55	103	141	166	180			
Region II Mean			52	97	134	164	180			
SLI* Mean			53	101	138	163	180			

* Small Lakes and Impoundments

Figure 3. Length frequency histogram for bluegill sampled from Richland Dam, Jones County, 2015.

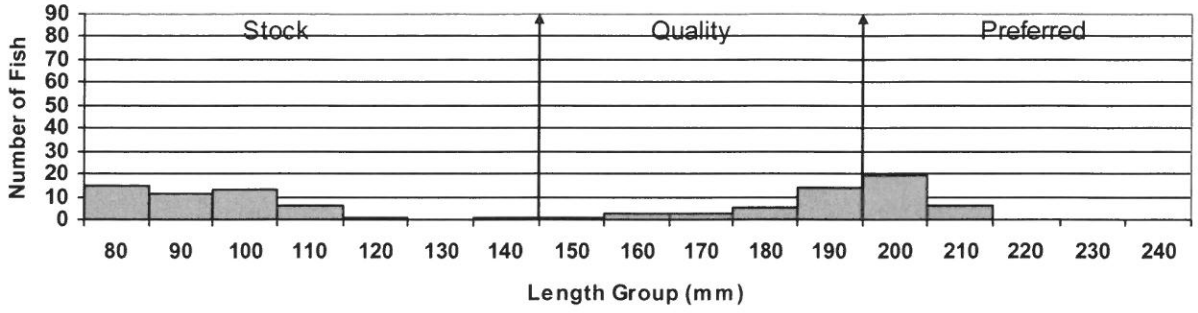


Figure 4. Length frequency histogram for bluegill sampled from Richland Dam, Jones County, 2012.

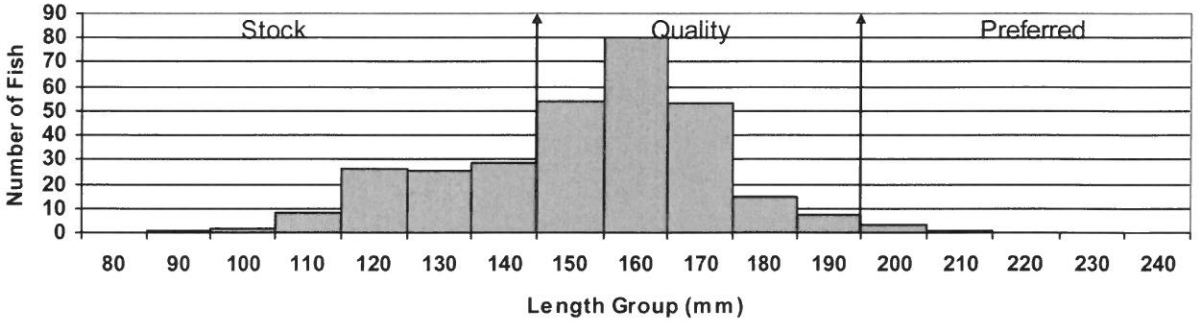


Figure 5. Length frequency histogram for bluegill sampled from Richland Dam, Jones County, 2009.

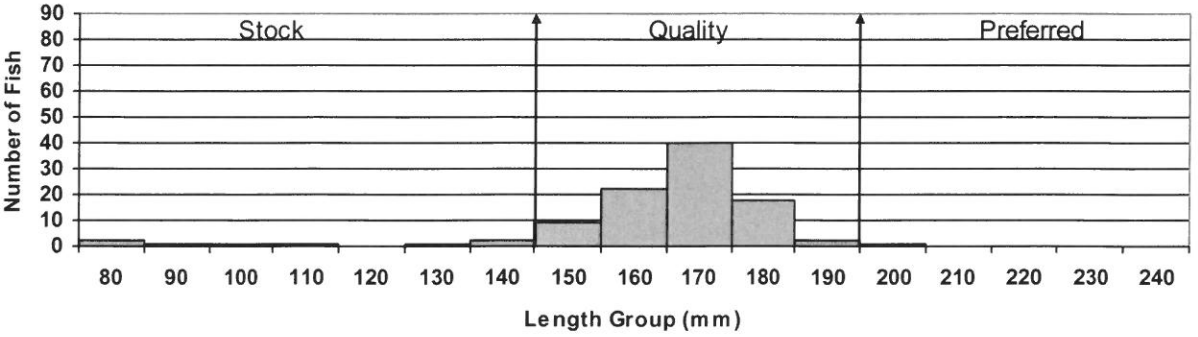


Figure 6. Length frequency histogram for bluegill sampled from Richland Dam, Jones County, 2006.

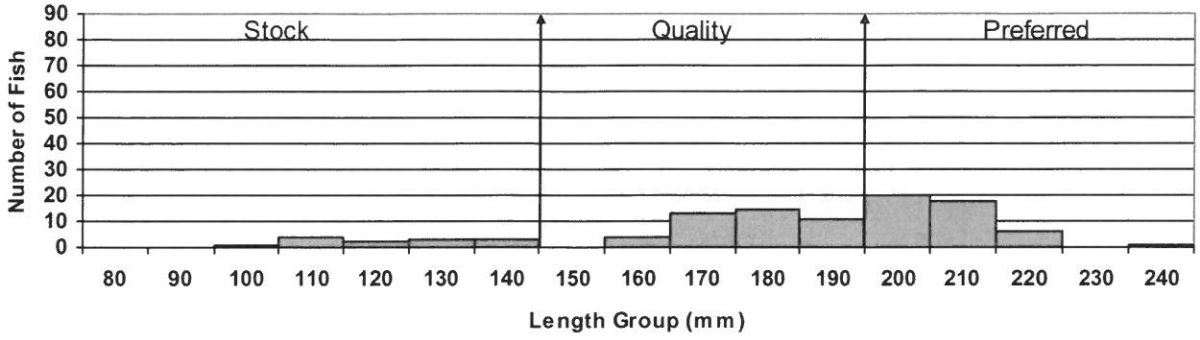
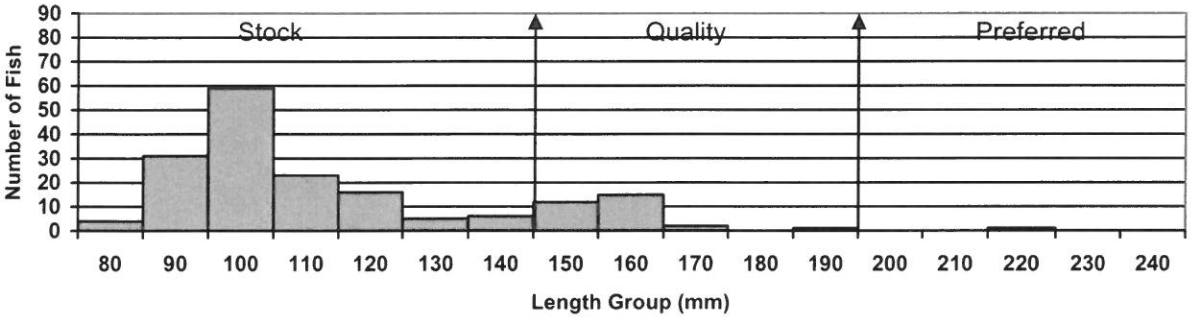


Figure 7. Length frequency histogram for bluegill sampled from Richland Dam, Jones County, 1993.



Black Crappie

Richland Dam continues to contain a black crappie population. The CPUE of 3.1 is below the 14.5 from the 2012 survey as well as the 7.3 four year mean (Table 2). Figures 8 through 12 illustrate the length frequency histograms for the fish sampled over the past five surveys. Last survey the population was dominated by a large group of young fish, with the size a little more spread out this survey. Although the 2009 year class is still the dominant group found in the population like the 2012 survey. Condition is fine with a mean Wr of 88. Growth is on the slow side with means below statewide, regional and SLI means (Table 6).

Table 6. Average back-calculated lengths (mm) for each age class of black crappie sampled from Richland Dam, Jones County, 2015.

			Back-calculated Age									
Year Class	Age	N	1	2	3	4	5	6	7	8	9	10
2013	2	5	74	132								
2009	6	13	72	112	161	197	216	230				
2008	7	3	68	97	140	177	210	237	248			
2007	8	1	67	108	141	185	206	231	241	251		
2006	9	1	61	87	106	131	178	214	229	234	241	
2005	10	1	64	106	128	154	178	223	234	243	260	265
All Classes		**24**	**68**	**107**	**135**	**169**	**198**	**227**	**238**	**243**	**250**	**265**
Statewide Mean			83	147	195	229	249					
Region II Mean			75	132	177	209	235					
SLI* Mean			78	134	180	209	226					

* Small Lakes and Impoundments

Figure 8. Length frequency histogram for black crappie sampled from Richland Dam, Jones County, 2015.

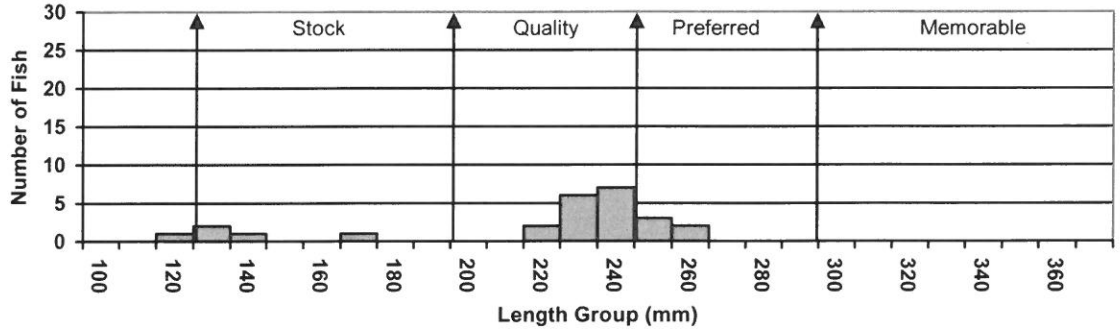


Figure 9. Length frequency histogram for black crappie sampled from Richland Dam, Jones County, 2012.

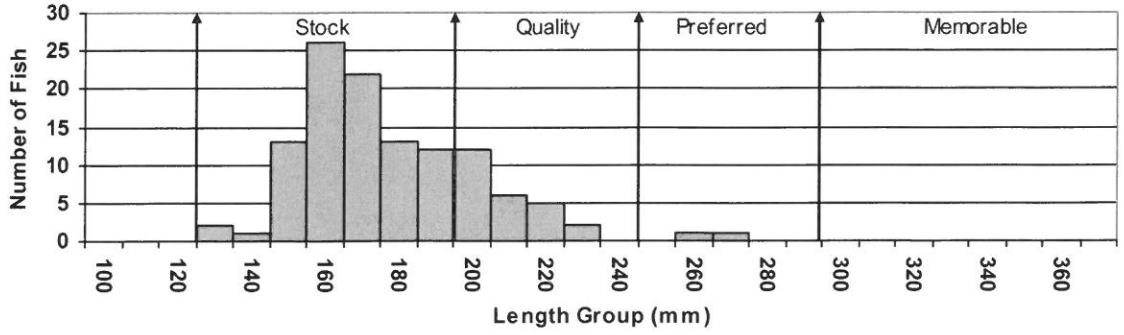


Figure 10. Length frequency histogram for black crappie sampled from Richland Dam, Jones County, 2009.

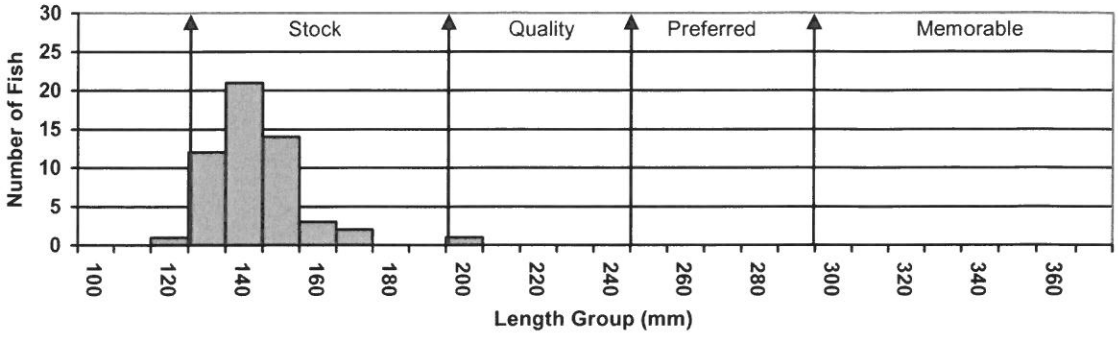


Figure 11. Length frequency histogram for black crappie sampled from Richland Dam, Jones County, 2006.

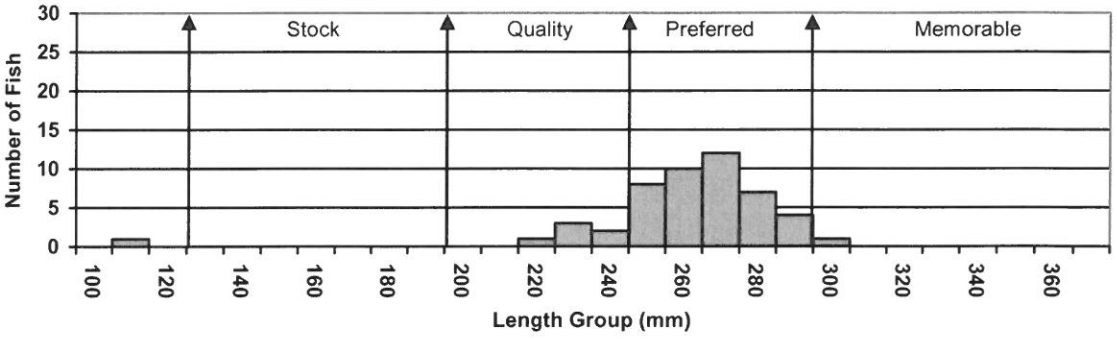
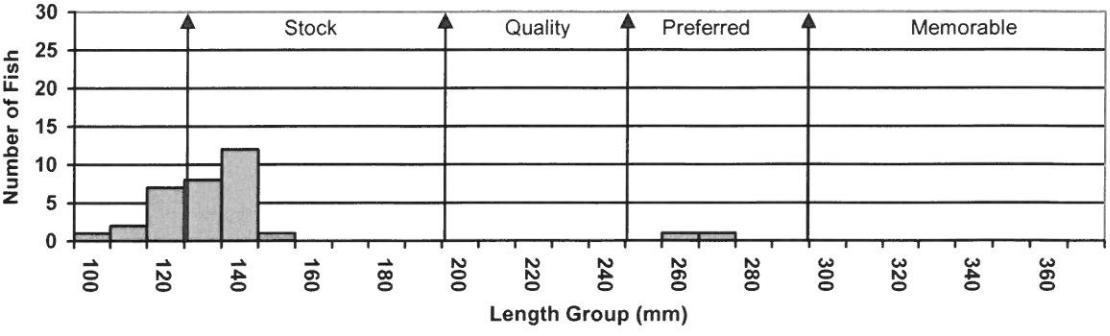


Figure 12. Length frequency histogram for black crappie sampled from Richland Dam, Jones County, 1993.



Other Species

Black bullheads were the only other species sampled this survey. The CPUE of 1.5 is up from the 1.5 from the 2012 survey as well as the 0.3 four year mean. Yellow perch was the only species not sampled this survey that had been in past surveys.

RECOMMENDATIONS

1. Resurvey in 2018 to further monitor the fish populations and to continually collect trend data on the lake.